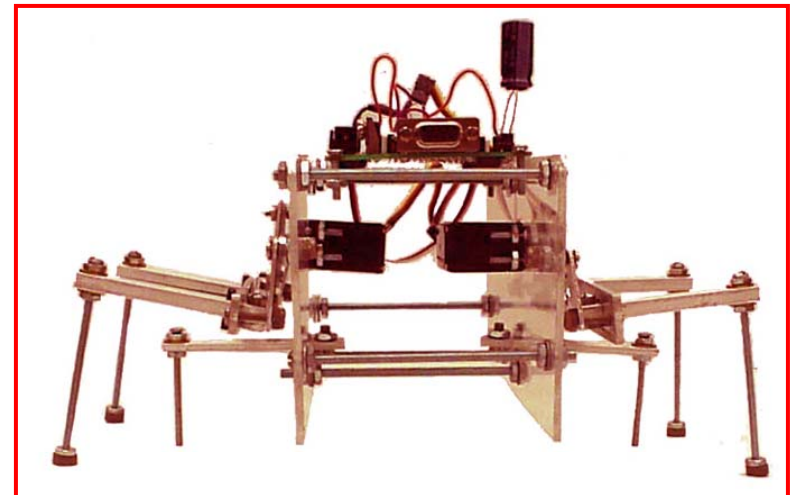


Department of Mechanical Engineering

The Mechanical Engineering Program

Presentation
by
Professor M. V. Otugen



NASA Dryden Flight Research Center Photo Collection
<http://www.dfrc.nasa.gov/gallery/photo/index.html>
NASA Photo: ED01-0230-4 Date: August 13, 2001 Photo by: Carla Thomas
The Helios Prototype aircraft at approximately 10,000 feet flying above cloud cover northwest of Kauai, Hawaii.

Agenda

- **Overview**

What is Mechanical Engineering ?

- **At Polytechnic**

What is so special about ME program at Poly?

- **Details of the ME Curriculum**

Aerospace Engineering Concentration

- **What will you be when you graduate**

Poly Alumni

Prospective Employers

Top Ten ME Achievements in the 20th Century

- 1. The Automobile**
- 2. The Apollo Program**
- 3. Power Generation**
- 4. Agricultural Mechanization**
- 5. The Airplane**
- 6. Integrated Circuit Mass Production**
- 7. Air-conditioning and refrigeration**
- 8. Computer-aided engineering technology**
- 9. Bioengineering**
- 10. Codes and standards**

Source: Wicket, *An Introduction to Mechanical Engineering*, 2004

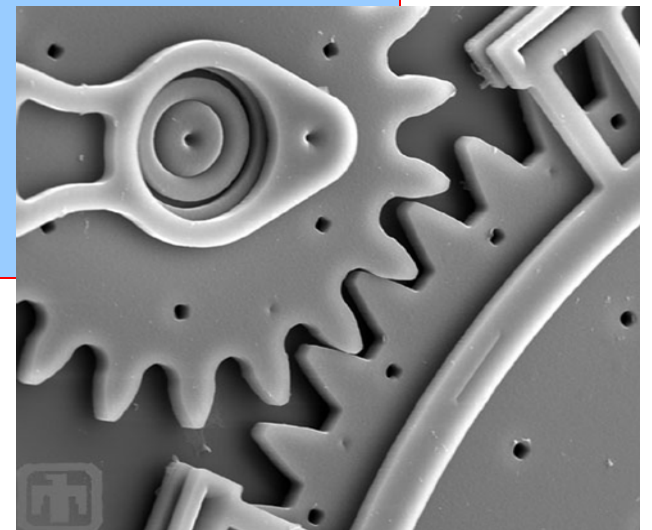
Mechanical Engineering

- ***Undergraduate degrees offered:***
 - ***Bachelor of Science***
 - ***Mechanical Engineering***
 - ***Mechanical Engineering with Aerospace Engineering concentration***
- ***BS Degree is ABET accredited***



Mechanical Engineering (continued)

- *The heart of any department is its professors*
 - *9 full-time faculty members*
 - *Most carrying out cutting-edge research and making discoveries*
 - *Strong interaction with students*
 - *Faculty actively engaged in undergraduate students education; we teach the courses*
 - *Has received numerous University and National Awards*



Mechanical Engineering (continued)

- *Our students:*
 - *Are highly motivated*
 - *Have a good sense of where they want to go*
 - *Most work during the academic year*
 - *Vast majority has substantial engineering experience to graduation*



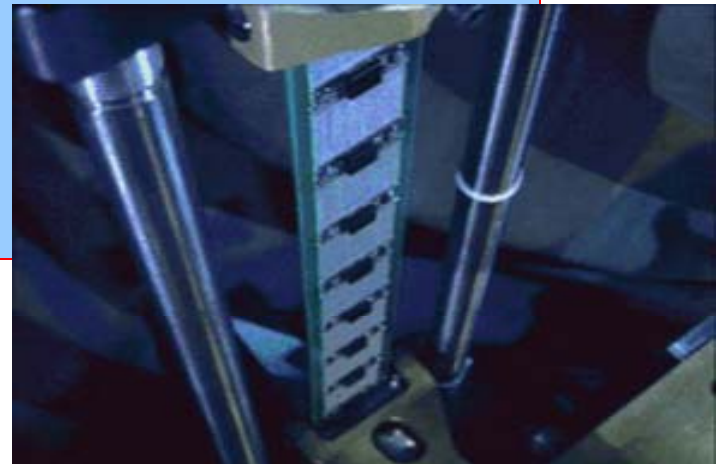
Mechanical Engineering (continued)

- *BS in Mechanical Engineering*
 - *A new curriculum with 128 credits*
 - *8 semesters; 4 year program*
 - *It is a professional degree*
 - *Hands-on laboratory, and computer applications*
 - *Focus on communication skills*
(we teach you to say what you mean)



Mechanical Engineering (continued)

- **A program that emphasizes:**
 - modern computing tools and equipment
 - engineering design
 - engineering practice
 - projects, from the sophomore year up...
 - national student competitions
 - interests, resources, and faculty knowledge
 - competitive annual design awards



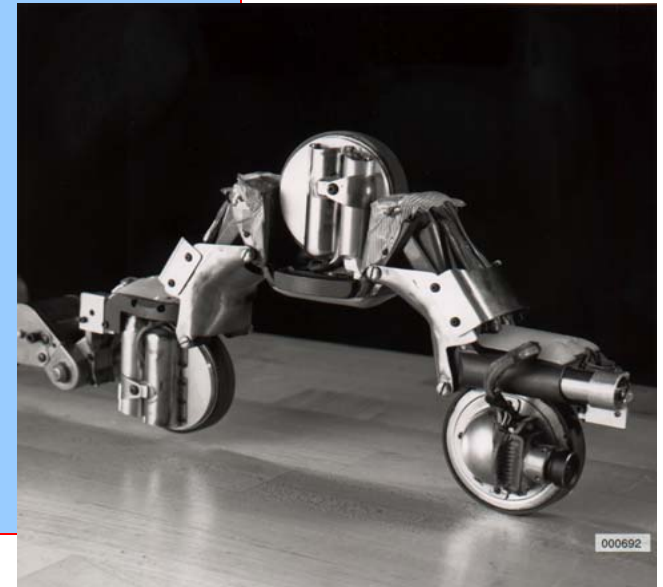
Mechanical Engineering (continued)

- *Computers in our program* (*we do make it fun!*)
 - *They are an integral part of Mechanical Engineering*
 - *we design them, and*
 - *we use them for:*
 - *computer aided analysis*
 - *computer aided design*
 - *computer controlled laboratories*
 - *computer aided instruction*



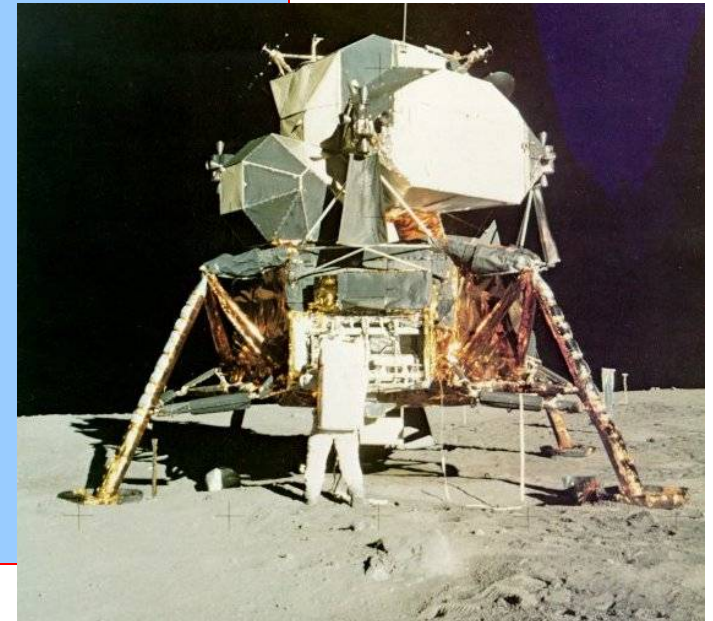
Mechanical Engineering (continued)

- *Senior (capstone) design course*
 - *Finally you get to use your knowledge!*
 - *Integrates all the student has learned*
 - *Two semesters, team-based experience*
 - *“Product Realization Process”*
 - *Integrates analytical, computer simulation and experimental knowledge*



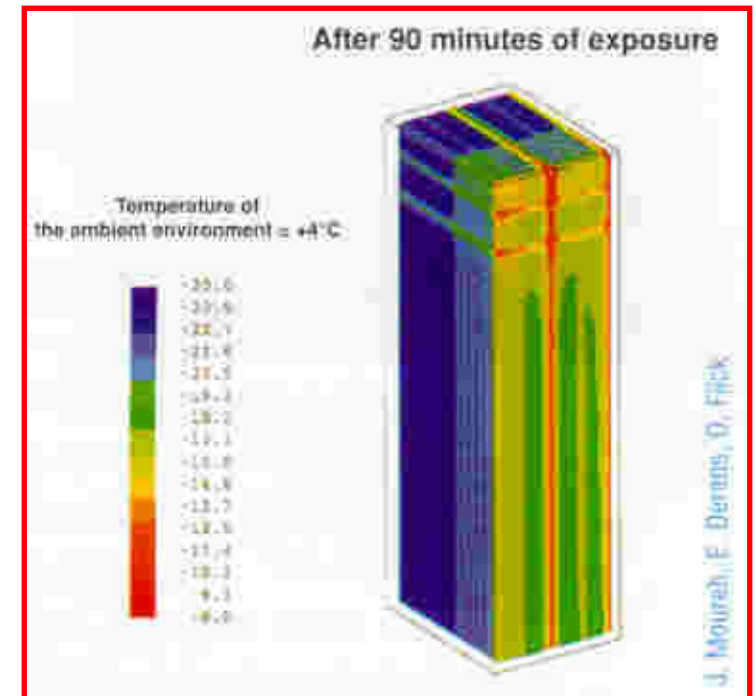
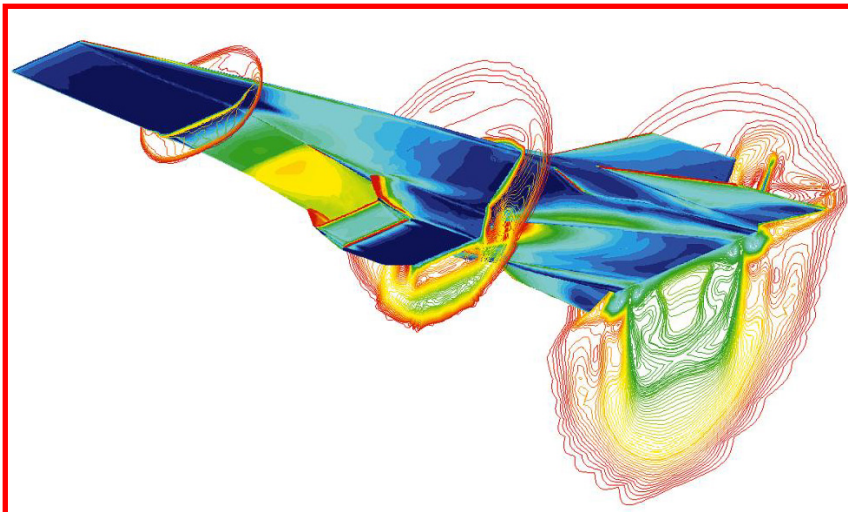
Mechanical Engineering (continued)

- *Three Stems in ME:*
 - *Thermal & Flow Sciences*
 - *Mechanical Systems / Structures*
 - *Control*
- *Leading to:*
 - *Engineering Design*



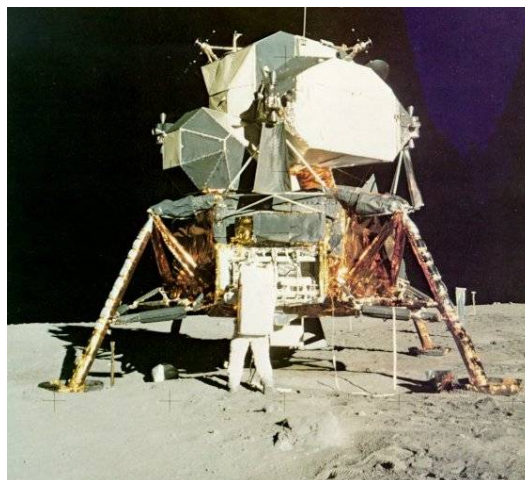
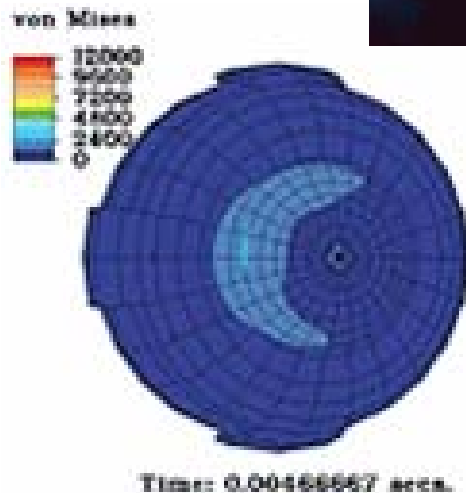
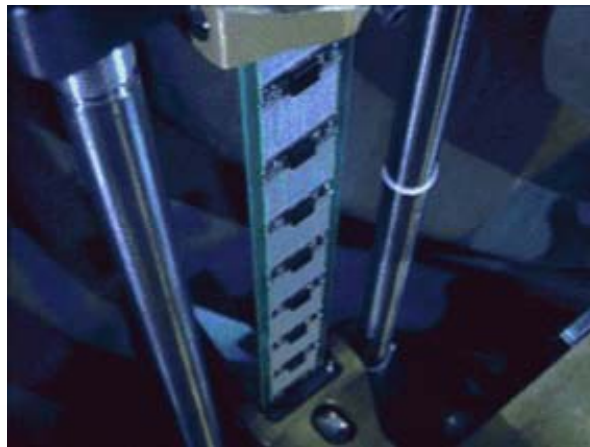
Mechanical Engineering (continued)

Thermal & Flow Sciences



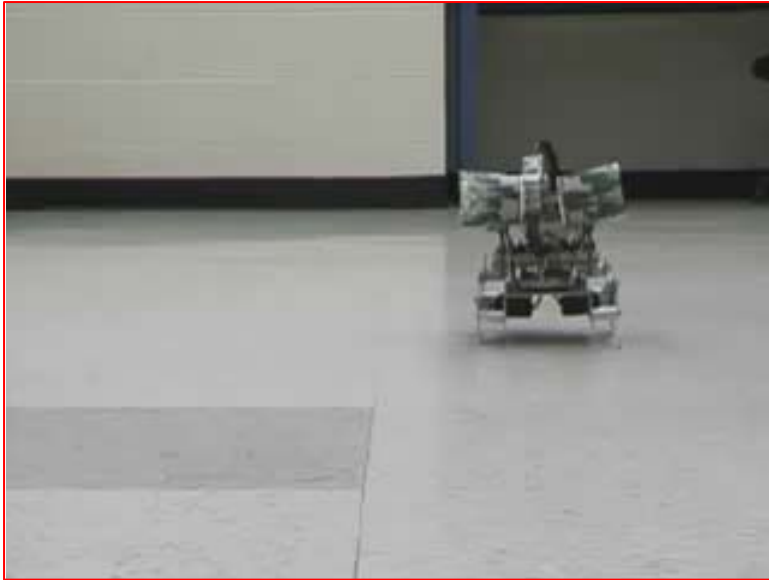
Mechanical Engineering (continued)

Mechanical Systems / Structures



Mechanical Engineering (continued)

Control



A255 robot

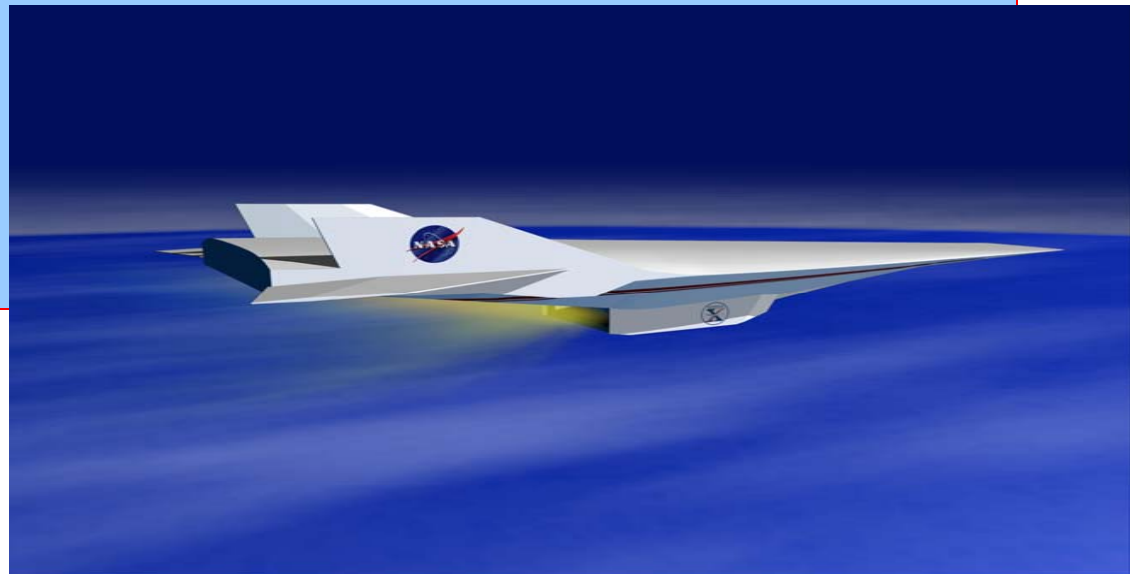
Mechanical Engineering (continued)

Aerospace Engineering Concentration



Aerospace Engineering Concentration

- Popular among our students*
- Provides the basics of Aerospace Engineering*
- Enables the graduates to get jobs in this industry*
- Many of our past graduates chose aerospace industry*



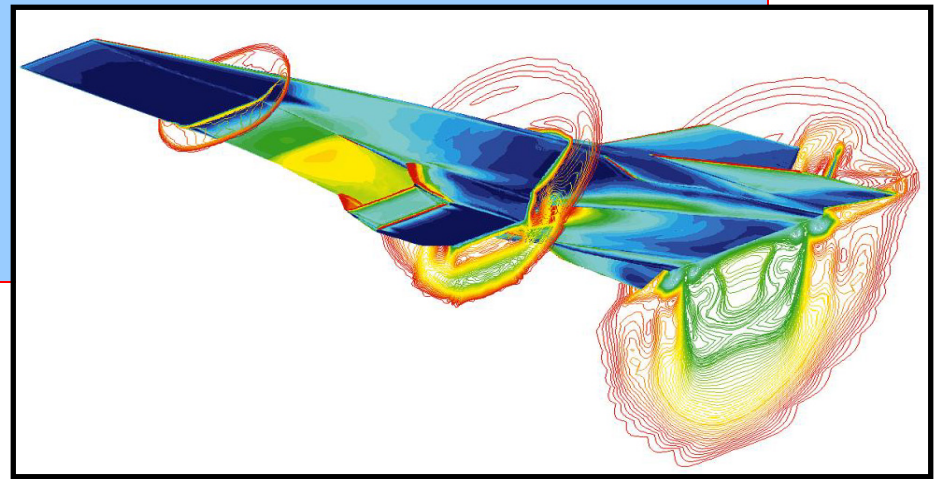
Aerospace Engineering Concentration

- ***How does it work?***
 - Take 4 courses (12 credits) of your electives in the aerospace specialization courses in:

Aerodynamics

Air & Space Propulsion

Aircraft Flight Mechanics



**Question: Why choose
Mechanical Engineering at Poly?**

- *We'll know you by your first name*
- *You'll know all your classmates' names*
- *You'll get personal attention*
- *You'll get the best education there is*
- *Your degree will have a great value*
- *Doors will open to you for great things!*

What will you be as a Poly Alumnus?

- Professionals working in: industry, academia, government
- ... rising to the top of your career becoming managers, vice presidents, presidents, CEOs
- Wall street trader or doctor or lawyer or
- ...owner of your companies
- But first and foremost, you will be a part of the Poly family and
- a provider of continuous input to us for our continued excellence

Who are some of our employers?

**EXXON,
ConEd,
Keyspan,
IBM,
Sun Systems,
Symbol Technologies,
Lucent
Computer
Associates,
AIL**

**General Electric, United
Technologies,
Ford Motor Company,
GM,
Photocircuits,
Boeing,
General Dynamics,
NASA,
Air Force,
Navy Research &
Development**